Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY

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APRIL
1933

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April, 1934
Vol. 7 No. 4

Electricity on the Farm

IN THIS ISSUE

Water Systems That Give Little Trouble in Operation

BY E. W. LEHMANN

Modern water systems are practically automatic, require little attention and will deliver water in varying quantities depending on their capacity. Difficulties do arise in the operation of a water system and, as the author describes on page 4, are but seldom traceable to the mechanical part of the system.

Cutting Costs in Cooling Milk

BY JAMES W. IRWIN

An increasing number of dairymen are employing mechanical refrigeration, each being a satisfied user. These units make it possible to produce a better quality product and at the same time reduce labor costs, resulting in increased profits. The author, on page 7, presents the testimony of several dairymen on this subject.

The Electrified Fence

BY F. C. KINGSLEY

Temporary fencing is often desired about the farm but found too expensive. With the development of the electrified fence, the cost item is greatly reduced, and the unit may be of a permanent nature as well. Besides describing the outfit, the author also lists its advantages and disadvantages, on page 10.

Propagating Dahlias with Electric Heat

BY C. E. HANSEN

Electricity, according to Mr. J. J. Zant, a dahlia grower of Grand Rapids, Mich., has reduced plant loss as well as time in the raising of dahlia cuttings. (See page 14.) And his friends, through his recommendation, are employing electricity in a like manner.

Regular Monthly Features

Electrical Housekeeping, page 11; On the Air, page 15; Questions and Answers, page 17; What's New, page 18.

EDITORIAL

THE U. S. Department of Agriculture recently conducted a survey among farmers in the southern part of the country, and among the questions asked was the following: "If you had five hundred dollars to spend improving your home how would you spend it?"

While the majority answering the question specified such improvements as repairs of exterior and interior walls, ceilings and floors, it is significant that nearly a third of the replies received indicated a water system as first choice. No other mechanical equipment stood anywhere near the water system in popularity.

That the water system ranked first is not surprising, for no other feature around the farm home represents such a tremendous saving in labor at such a small cost of operation as the power driven water plant. Furthermore, a dependable and plenteous supply of water encourages cleanliness and, consequently, better health, to say nothing of the increased contentment on the part of the farm housewife and the balance of the family.

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Right: Water in the kitchen makes the work easier.

Below: A country home cannot be made modern until water is available under pressure.

WATER SYSTEMS THAT GIVE LITTLE TROUBLE IN OPERATION

By E. W. LEHMANN

MANY people hesitate to purchase types of equipment they have not used because they cannot anticipate the difficulties that might arise in connection therewith. The provision of an adequate water supply on the farm, always under pressure, involves a type of equipment which requires comparatively little attention. The modern electric water system has few things that get out of order and the water supply worries are usually outside the pumping unit; at least this has been my experience during the past eleven years in providing water in my own home which is outside the city limits. My problem of providing an adequate water supply is the same as any farmer's. It is a problem I must solve as an individual; it cannot be solved as a community problem.

Eleven years ago when we bought our small farm, water for drinking was supplied by a hand pump from a driven well. The bathroom, the kitchen, and a toilet in the basement were supplied from a cistern by means of a small double acting automatic control electric pumping unit, equipped with a storage tank of approximately one hundred and fifty gallons capacity.

It was our desire that our water facilities meet what I consider the three requirements of a good water supply. First, that the water be clean and safe for drinking. Second, we wanted plenty of water; we did not want to have to skimp; we wanted an adequate supply, and third, we wanted the water under pressure in the house and outside where it was to be used.

In considering the matter of purity of the supply

A satisfactory water supply in the country is made possible by electric power.

and its suitability for drinking, we had learned that the most important factor was that the well be properly protected and situated where the possibility of contamination was reduced to a minimum. Since the well was located where the possibility of surface contamination was very slight and the protection at the top seemed adequate, a sample was submitted to the state department for analysis and it was found to be good drinking water, but very hard. More will be said about this later.

Our first inconvenience was experienced when we found our cistern empty. As a source of supply it was satisfactory neither from the standpoint of quantity nor quality. The electrically operated pump did deliver the water to the point where it was needed as long as the supply lasted. Without disconnecting the old hand pump, it was left in place at the well, the electric pump was connected so water could be pumped from either the well or the cistern. The connection to the well pipe was made through a tee just below the hand pump. This arrangement was not entirely satisfactory because the pump leathers on the hand pump would not hold one hundred per cent and considerable priming was necessary.

Another Difficulty Encountered

The second real difficulty was encountered when the amount of water delivered by the pump decreased and the time required for pumping the water needed increased until the pump operated most of the time. It was apparent that something should be done. A careful inspection of the pump was the first step taken to locate the trouble. The cylinder was found to be in excellent condition, the plunger fitted snugly, the valve seats were clean, and the valves were in fair condition and seated properly. As a precaution new valve rubbers were ordered. Before receiving the valve rubbers, an opportunity to try another pump was presented. However, the results were not satisfactory, which prompted an investigation of the condition of our well and other wells in the community.

It was found that the neighbors had the same type of driven well and about the same depth. Their supply was abundant and one of them had pumped from his well for more than 20 years without trouble. Although the experience of other well owners in the community did not point to the well as the source of the trouble, we decided to pull up the well pipe. This job was not a very difficult one. Some blocks of wood, 4" x 4" pieces of timber, and a chain were secured. The blocks were placed on each side of the well after the top had been removed to get at the pipe. A four by four was put across to serve as a support for another piece of timber used as a lever to lift the pipe from the ground. A simpler and easier method was used several years later when a chain hoist was used by attaching it to the cross timber and to the pipe which gave a direct pull.

Encrusted Screen Stopped Flow

When the pipe was drawn from the well, the screened point, which was about three feet long, was found to be badly encrusted with a cement like material that practically prevented water from passing through it. A new point was secured at a nominal cost and it was put on the pipe. The pipe was then put back in the well and the pump connected, and it operated satisfactorily. Although one of our neighbors, a half mile away. has not pulled his well pipe for over 20 years. we have found it necessary to pull the pipe and change the screen point regularly at about three or four year intervals. The water has a very high lime content and, in combination with the fine sand present, a cementing material is formed which closes the screen openings.

Another trouble developed which was characteristic of the type of such pumping units when flat belts were used instead of the V type belt now used. The belt would not stay on the pulley. The unit also became rather noisy. While the troubles were not serious, I decided to dispose of the old pump and secure a new one. The new one is practically free from noise and has given continuous service.

Two interesting troubles developed however which have a bearing on the water supply problem. About five years ago, although the electric circuit was fused and grounded, the motor was burned out by lightning, but without damage to the remainder of the unit or to the house. The motor was exchanged for a rewound one of the same type and the pump was again put in operation. After some months it was apparent that something was wrong and since pulling the pipe was no longer considered a difficult task, this was done and it was found that the electric discharge from the lightning had melted a hole through the suction pipe below the water level. It is evident that such a condition would result in pump trouble

when the water level was lowered in the well, as was the case.

Too often the owner of an electric pumping unit is prone to call the power company representative when the least trouble develops. A few days ago a farmer friend called the rural electric representative of the power company and told him something was wrong with their pump, because it was running and they could get no water. The farm service man made the call and found there was nothing wrong with the pump, but the cistern was empty. To expect a service man to make a pump operate with no water available is as bad as asking garage men to make a car run when the only trouble is an empty gas tank.

We have found that a pump of the capacity we have which is rated at 300 gallons an hour is plenty large for home use and for a reasonable number of livestock. The quantity available from the source is more liable to be the limiting factor. For irrigating a large yard the unit is entirely too small. For example to make a 3-inch application of water on a yard one hundred feet square it would take over three days continuous pumping, with no water available for other purposes. We planted a lot of shrubbery in our yard and our water supply made it possible to water it at a critical time without loss. In selecting a water system, the needs and the water available from the well or cistern must be carefully considered.

Tests to Determine Water Consumption

To determine the amount of water we used, on February 17, 1932, we installed an electric meter and a water meter. Readings taken in 1932 and on a corresponding date two years later, in 1934, indicated that the amount of water pumped during the two-year period was 357,587 gallons or an average of a little less than 490 gallons a day. This amount of water took care of all the family needs for seven people, water for two cows and other miscellaneous uses. The electric energy required to pump this amount of water was 475.5 kilowatt hours. The total cost including interest on the investment, depreciation, and maintenance would not be more than five cents a day.

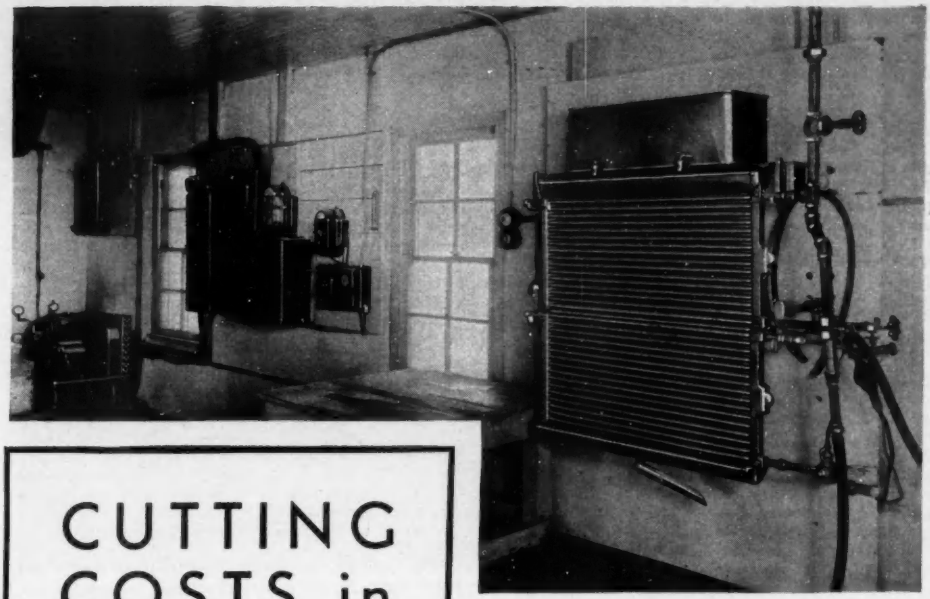
Employs a Water Softener

Several years ago we gave up the use of the cistern as a source of soft water and installed a water softener. Now all of the water that is heated passes through this softener. Prior to this, once a year, it was necessary to either clean out or renew the hot water coil in the furnace, due to filling up with lime. The same trouble was experienced with the hot water heater.

We have found that to force the water through the softener, a slightly higher pressure should be maintained than when a softener is not used. We have also found that the range of pressure under which the pump operates affects the output of the pump as well as the amount of electricity used. While the normal output of our pump, as we operate it, is about 250 gallons in an hour, if operated at 10 pounds pressure the output is considerably more, with less electricity used, and when operated at fifty pounds pressure, the number of gallons pumped is reduced by one-third and the electricity used is increased.

During the past eleven years with both the reciprocating and turbine type pumps, practically no mechanical troubles have developed. An occasional lubrication of the motor and of the pump bearings is all that is necessary on our present system. Difficulties outside the pumping unit are to be expected. It is evident from the few examples given in this article that many of the apparent pump troubles are not pump troubles at all, but are conditions that develop which make satisfactory pumping impossible.

A compact and efficient pump installation of the automatic type in the rural home of W. Frank Matthews, near Lafayette, Indiana.



Aerator operated by direct expansion from compressor on the Kendall Stock Farm near Indianapolis, Indiana, where a herd of Guernseys produce 100 gallons of milk daily.

CUTTING COSTS in COOLING MILK

By JAMES W. IRWIN

ONE keen farmer, who is always on the watch for methods to reduce costs and to improve operations, is Charles A. Sockwell of Covington, Georgia. Running a 900-acre farm, located along the Alcovy river, about 45 miles east of Atlanta, Sockwell has a herd of 300 Jerseys and produces 600 gallons of milk daily during peak production. Costs to Sockwell must be proved and equipment must produce as represented in order to remain on his farm. So let's listen to what he has to say:

"I installed one 8 x 10 x 12 milk storage room on my dairy farm to eliminate the necessity of hauling ice from town. The complete installation cost me $800, terms being $200 cash and $50 a month. Before installing Electric Milk Covering equipment, my summer ice bill was $200 a month for approximately six months, and even in December and January my ice costs were at least $50 a month.

This installation has paid for itself in one year and my additional profit in saving and the higher price I get for my milk has averaged $100 a month. So satisfactory has been the operation of the original installation that this Spring I doubled my storage capacity and refrigeration facilities, paying cash for the complete equipment out of the savings from the first.

Fresh Milk is Chilled Immediately

"The milk is taken from the milking machines to the aerator and is chilled down to 34 degrees within ten minutes after it leaves the cow. Our peak production is around 600 gallons, all of which is taken daily by open top truck to Atlanta. On the hottest summer days it arrives at the dairy below the fifty degrees required by law. Its condition is such that I get a better price for it, always have an immediate market for all my herd will produce, and I am free from the worry of having cans returned by the dairy because the milk count fails to meet the required standard. The bacteria count of my product when it is tested in Atlanta is never above 5,000 and most always around 3,000.

"My milk cooling equipment was the first installed around Covington. In the year since, many of my neighbors have purchased milk coolers of the same make so their output will be up to the high standard I have maintained. Now that we have mechanical refrigeration with its attendant

efficiency, savings and profit, it is hard to realize how we got along without it."

Another Covington, Ga., farmer who uses electric milk cooling equipment, E. G. Martin, has this to say:

"Last summer my average expenditure for ice was $75 a month. My winter ice costs ranged between $35 and $40 a month. This year my milk production is about thirty per cent more than last year and the operating cost of my milk cooling equipment during the hottest month was only $22. My monthly payment is $43, over a two-year period, so I am getting a very decided profit when the fact is taken into consideration that my ice costs this year probably would have been at least one-fourth greater.

Reduces Shipping Costs Too

"In addition, we are saved the trouble of having ice delivered to our cooling house and also from having to put ice tubes in our milk cans for shipment to Atlanta. The fact that our milk leaves the dairy at a low enough temperature to remain properly cooled for the trip saves us twenty-five per cent in shipping since we are able to ship the same amount of milk in fewer cans and pay the trucking company accordingly.

"Our storage box has a capacity of 200 gallons of milk. The electric cooled aerator pulls the milk down to 36-38 degrees F. within ten minutes or so after it leaves the cow. The milk leaves here early in the morning for Atlanta and reaches there well below the 50 degrees established by law, which insures a low bacteria count and prevents the return of cans of milk by the city inspectors.

All Year Refrigeration Required

"In Georgia refrigeration is necessary in winter as well as summer because we cannot take a chance on the reliability of chill weather. We must have refrigeration the year round and formerly we were never without ice to chill the milk when it came from the cows. With mechanical refrigeration we are able to turn our cooling system on or off as the weather requires."

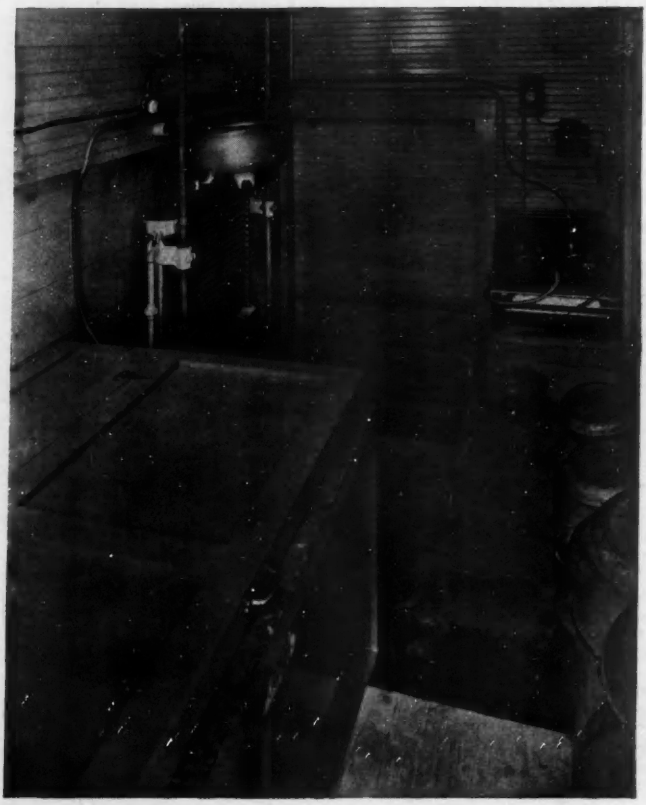
Mechanical refrigeration plays an important part in the operation of the big Kendall's Stock Farm just outside Indianapolis, Ind., where a herd of Guernseys produces some 100 gallons of Golden Guernsey milk daily.

On this farm, direct expansion is employed in the cooled aerator. "By using this method," says Edwin J. Kendall, who conducts this 360-acre farm, "we have been able to do away with the motor required to circulate the brine and we estimate our cost of refrigeration through this method at about half of what it was with the brine system."

The aerator used on this farm is four feet long, with 18 tubes and maintains a temperature ranging from 42 to 35 degrees at all times. No difficulty is experienced here in keeping the bacteria count down to an exceedingly low level.

Stored in Dry Box Over Night

After milking at night the milk is stored in a dry box, 5 by 7 feet, and kept until after the morning milking when the milk from both



Interior of the milk house on the farm of Thomas Monroe at Cammillus, New York, showing the milk cooling equipment employed on this farm.

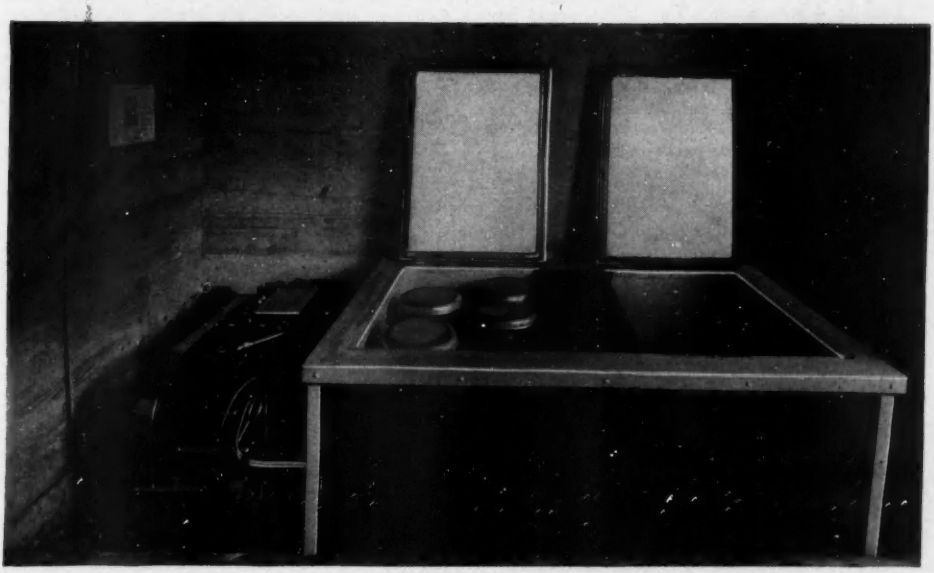
At Left: Milk house on the E. G. Martin farm, Covington, Georgia, showing refrigeration compressor and walk-in cooling box.

Below: Another view of the Martin dairy. The evening milk is kept in this storage box.

milkings is loaded on an insulated truck and driven to the city, some 18 miles away.

Even up in the colder sections, where it is easily possible to cut one's own ice and store it, dairy farmers are finding that it is economical to employ electric refrigeration. Ray V. Collins, of Colchester, Vermont, is one of these farmers, and he says: "After carefully considering the cost of labor of building an ice house and putting up ice for cooling our milk and comparing this investment and yearly cost with the investment in electric milk cooling equipment and its cost of operation, I could see clearly that was the best for me to buy. In addition to the labor and money saved, which is a large item, I am equipped to produce a much better quality of milk."

The next ten years will see a still further development in American farm life. Power lines will be extended still further into the country as the power companies sense the growing use of power on the farm. Within the next few years, the use of mechanical refrigeration will increase remarkably for the farmer is finding out that, just like the manufacturer in the city, he must make use of machinery and modern inventions. Science has harnessed many of the forces of nature for his use, and the successful farmer will use them.



The internal mechanism of the electric fencer.

THE ELECTRIFIED FENCE

By F. C. KINGSLEY

MANY farmers wish to put up temporary fences but find it expensive on account of having to use two or three wires around a field to hold in their livestock.

A manufacturer has developed an electric fencer which energizes the fence. This apparatus, known as the Gengler electric fence, is equipped with a sign flasher which is so arranged that the fence is alternately charged at 110 volts and 55 volts at intervals of a few seconds each. It is also equipped with a current limiting resistance which limits the current through the animal to a very small amount. Thus, dangerous shocks are avoided by the use of the current limiting resistance and the reduced voltage at regular intervals.

Mr. John Kelly of Caledonia, Illinois has used one of these fencers for the past year. Over 300 rods of fence were energized, some being permanent fence and some temporary fence where only one wire was used with post spacing of from 3 rods to 4 rods apart. Two wires would have been necessary to keep in Mr. Kelly's cattle, horses, calves, and sheep if the electric fencer had not been usd.

The use of less wire and the saving of time during the spring rush for fencing off temporary pastures results in a saving equal to the investment in the electric fencer, according to Mr. Kelly.

Hogs were penned off with satisfactory results with the exception of small pigs. The ground was very dry last year at the time the pigs were fenced off which may have been the reason for its ineffectiveness. Undoubtedly two wires should be used, having the lower wire permanently grounded. Shoats from 80 to 100 pounds were held in a pen with only one wire. Mr. Kelly felt that pigs could not be separated from their mothers by use of two wires, although this system was not tried out.

The installation of this equipment is simple, it being necessary only to fasten the metal box to a wall of a building with four screws and plug the cord into a convenient outlet. The wire fence should be fastened to posts so as to avoid grounds. A wooden post or stake is sufficient as the livestock will not lean on the wire to push the posts over. If metal posts are used a block of wood should be wired to the post and then the wire fence stapled to it. All wire connections should be made good, using sufficient wire to make a good contact when splice is finished. Grease may be used to prevent joint from rusting.

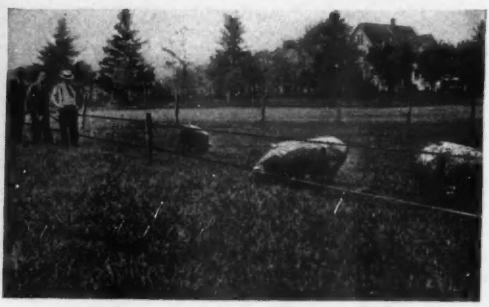
The operating cost of the electric fencer is very small for only 3 kilowatt-hours per month was used by the apparatus.

The advantages of this electric fencing equipment are:

1. Less wire required for fencing fields.

(Continued on page 18)

Above: The cattle are content to look at the green corn and sudan grass.



Right: An effective two wire fence for hogs is employed on a Wisconsin farm.

ELECTRICAL HOUSEKEEPING

Conducted by GAIL MEREDITH

BUYING ELECTRICITY FOR COOLING

WHEN you buy electricity for cooling, no one has to remember to put up the ice card, nor decide in the morning whether it is to be fifty or a hundred pounds that day. The current is always there, flowing over the wires to run the motor whenever the sensitive mechanism inside the box warns that the temperature is rising, and there is heat to carry away.

The amount of that current you will need depends on where you live, the kind of box you have, where you put it and how you use it.

You cannot do anything about the climate.

> **"Whether it's cold or whether it's hot,**
> **We're gonna have weather,**
> **Whether or not."**

And while refrigerators on farms in Oklahoma may be using an average of 60 kw. hrs. a month, boxes on New Hampshire farms may need only 35. Separate meters on refrigerators in Kansas have shown an average use of 67 kw. hrs. while others in Wisconsin recorded only 45. It is quite clear that the current for cooling, like the coal for heating, depends somewhat on the weather outside.

But you can choose the box. If it is made by a reputable manufacturer, it will be well built, firm and strong, with adequate insulation. The door will fit tight, supported by heavy hinges and a latch that holds it snugly in place. This door will even have a rubber gasket, perhaps two, around the edges to make it air tight.

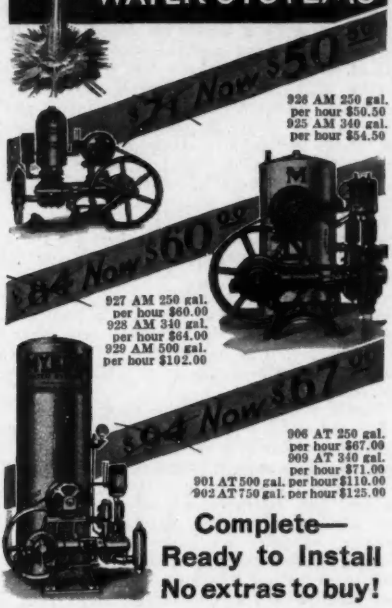
Good Insulation Important

Of these points, the insulation is probably the most important. And to some extent you must depend on the experience and reputation of the manufacturer as to its quality. But you can get some idea of the amount of insulation by the thickness of the walls and door of the refrigerator. The dealer may also have a sample of the wall construction. It is the insulation that keeps heat from soaking right through the walls of the box. That keeps down the cost of operation.

If, by some ill chance, you have come into possession of a box that lacks these things, if it is badly insulated, if the door fits loosely, and the latch fails to catch, you will pay more for the current to keep it cool.

When, as a child, I was slow about closing the outside door on frosty winter days, my grand-

A SMASHING CUT in PRICES on MYERS SHALLOW WELL WATER SYSTEMS


926 AM 250 gal. per hour $50.50
925 AM 340 gal. per hour $54.50
927 AM 250 gal. per hour $60.00
928 AM 340 gal. per hour $64.00
929 AM 500 gal. per hour $102.00
906 AT 250 gal. per hour $67.00
909 AT 340 gal. per hour $71.00
901 AT 500 gal. per hour $110.00
902 AT 750 gal. per hour $125.00

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"Pump Builders Since 1870"

mother used to hurry it shut with the reproachful query,

"Are you trying to heat up all outdoors?"

With a box that lets warm air leak in around the door or heat go through its sides anywhere, you are valiantly trying to cool a good share of outdoors, too.

But even the best of boxes will use more current in some places than it will in others. That makes finding the right place for it a matter for serious thought. From a recent study made in Georgia, Gartrell Danner, Associate Professor of Home Economics, reports that placing the refrigerator near a stove or in the sunshine may increase its use of energy by as much as 100%.

Unquestionably it should be placed where it will not overheat. But convenience is just as important as economy. Since this triumph of engineering skill has let us gather up food from the spring house, the cellar, the pantry, and the back hall to store in one convenient, sanitary box whose temperature stays safely cold for food preservation all year round, it seems too bad to lose that convenience by moving the box out of the kitchen.

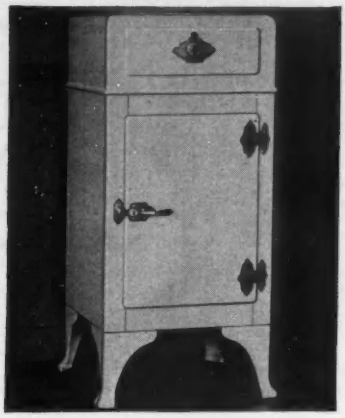
It would certainly be unfortunate to put it down half a dozen steps in the little hall for the grade entrance, even though it is on the shady side of the house.

And if you are tempted to put it on a north porch, well out of the sun and a hall and two doors away from the kitchen, remember that moisture as well as sudden changes of temperature are bad for the box, cabinet as well as mechanism, and please refrain.

Surely compromise is the solution here.

Less obvious errors of placing have come to light as a result of a recent study by E. P. Lewis and M. P. Brunig, agricultural engineers of Nebraska. They have been studying the effect of tucking the refrigerator into an alcove, under low shelves or between two close set cupboards, common mistakes we have been making in our enthusiasm for compact kitchens. These men say that one of these blunders may be increasing the use of current for our refrigerator from 35 to 50%.

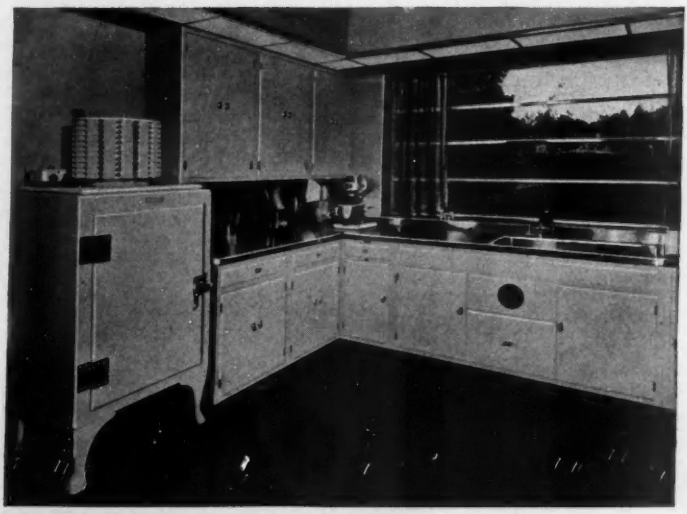
In an ordinary ice box, the heat taken from the food and the storage space melts the ice and is carried away by the water down the drain. When you cool your refrigerator mechanically, condensing coils carry the heat to the air outside. The condensing unit may be on the top or in the bottom of the box. Wherever it is, it needs a free circulation of air about it to give efficient operation.



Where will you put it, lady?

If this condenser is in the bottom of the box, the air may flow away from the back or through openings in the sides. Putting the box tight against the wall, or against built in cabinets will cut off the escape of air. If the warm air gets away too slowly, the machine does not have a chance to work properly. A shelf low over a refrigerator of this kind will cut off the escape of air as it rises, too.

"Where the compressor unit is enclosed within



Plenty of room for air circulation.

the cabinet and receives ventilation either through the back or sides of the cabinet," says Mr. Lewis, "a three inch space must be provided at the back or side in addition to the top space."

When the condenser coil is on top of the refrigerator, the warm air escapes in all directions. A shelf too close to the coil, or grills in front of it may keep the warm air from getting away quickly. For proper ventilation here Mr. Lewis recommends that there should be at least 12 inches clear space above the coils.

• • •

WASHING BLANKETS

WHEN you wake up one of these fine spring mornings with the sun warm on your face, but a nice brisk wind flapping the window curtains, you know at once that this is the day you've been waiting for. Warm, clear, and windy. This is the day to wash blankets.

Blankets used to be looked upon as somewhat tricky things to wash. More often than not they came off the line harsh instead of soft and woolly with their fleecy nap matted down like felt. Such blankets would no longer come up over our shoulders and stay tucked in at our feet. They would reach one way or the other, but not both at once.

This was doleful business, and doubly deplorable because it was quite unnecessary. To prove this, textile chemists of soap companies, engineers in research laboratories, the Home Economics Bureau of the United States Department of Agriculture have all taken a hand in studying why blankets go wrong, and what safe simple ways will keep them soft and warm.

Remember These Points

They find there are three things to remember in washing blankets. The temperature of the water, the purity of the soap, and the manner of handling.

Wash water and rinse waters all should be the same temperature, just lukewarm. And if you have any doubt about what lukewarm is, it is around 100-110 degrees Fahrenheit. It will not do any good to wash your blankets carefully in two sudsy waters at exactly the right temperature and then plop them into a tub of cold water. The cold rinse will shrink them up.

You can use any pure soap of a reliable brand. A soap with lots of alkali is likely to injure the fabric of the blanket. If you want to soften the water, borax or ammonia are safe assistants to your soap.

Wet wool is to be handled with care. Don't pull, don't rub, don't twist, don't stretch the blanket. If you are washing by hand, squeeze the water back and forth through the wool, then squeeze it out. If you are washing by machine, run it only a short time.

Now with that mouthful of do's and don'ts out of the way, let us see what these people who have studied the washing of blankets tell us we can do.

Most of them agree that we should not soak

(*Continued on page* 16)

Modernize for PROFITS
with an ESCO

With electricity, every farmer can modernize his farm for labor-saving and for comfort. But, if he keeps cows, he can also modernize for greater profits . . . by installing ESCO equipment.

With an ESCO MILK COOLER you avoid the hard and costly work of cooling milk with ice . . . you avoid the losses caused by improper cooling . . . and you hold your market against all comers. You quickly and automatically cool your milk to below 50 degrees and keep it cold until shipped.

With an ESCO ELECTRIC UTENSIL STERILIZER cans and pails are cleared of bacteria as they are dried, without smoke, dirt or fire hazard.

Patented ESCO Milk Cooler

ESCO Electric Dairy Sterilizer

Write today for full information.

Use convenient coupon

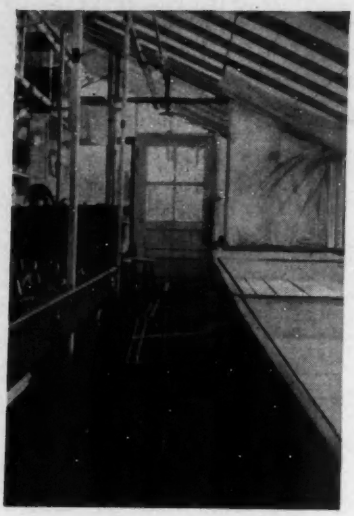
ESCO

ESCO CABINET CO.
West Chester, Pa. 4EOF34

I am making.....cans of milk a day. Please send information on ESCO Electric Milk Coolers, Utensil Sterilizers and Water Heaters.

Name ..... Address .....

P. O. ..... State .....



The cutting bench in Mr. Zant's propagating house is shown at the right, while the clump bench is at the left.

PROPAGATING DAHLIAS WITH ELECTRIC HEAT

By C. E. HANSEN

A prize dahlia grower finds electricity a valuable aid in propagating plants

FOR the past four years, Mr. John J. Zant, of the Zant's Wildwood Gardens, 2160 East Fulton Road, Grand Rapids, Michigan, has been using electric heat in his propagating benches to root dahlia cuttings.

Each January Mr. Zant plants dahlia clumps in the propagating house in which the temperature is kept between 45° and 50° F. Within a few weeks green shoots come from the clumps. The shoots are cut from the clumps and placed in the cutting bench to root.

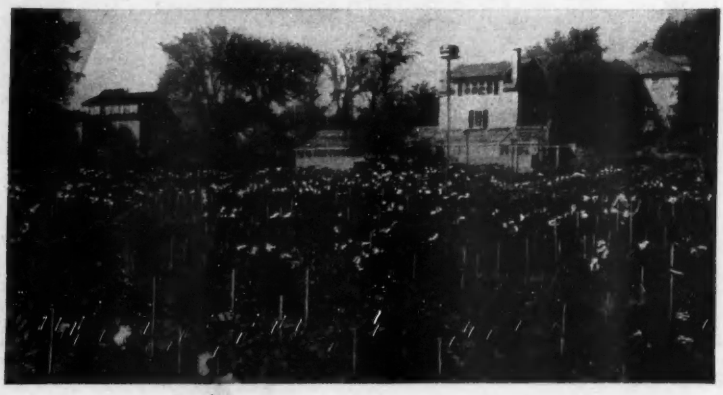
Recommends Use of Electric Heat

Mr. Zant considers electric heat essential in his cutting benches. A temperature 10° F. higher than the room temperature is maintained in these benches. This results in a reduction in the amount of coal required to heat the room, and also prevents the room from becoming too warm for the plants. An even temperature in the benches is maintained by means of a thermostat control. The time required to root the cuttings has been reduced by about two weeks by the use of soil heating. Mr. Zant says: "Our loss last spring was only three plants out of five thousand plants."

The first soil heating unit was installed by Mr. Zant in 1930. The results were so gratifying that he added the second unit. Last year an additional unit was installed due to increased business, and he is planning to add the fourth unit this year.

Mr. Zant is so pleased with the results of heating his benches electrically that he has recommended these units to several of his friends who raise dahlias. As a result, they are also using soil heating in their propagating benches. Each year the sand is removed from the cutting benches. They are thoroughly disinfected and whitewashed and are refilled with new, sterile sand.

Mr. Zant grows about three hundred different varieties of dahlias and they are purchased by people all over the United States.



General view of Zant's Wildwood Gardens, Grand Rapids, Michigan, where as many as five thousand dahlia plants are raised in a single season.

ON THE AIR

Conducted by Jerome J. Henry

Rats Board Ship; All Hands Happy

THERE are two rats on board.

And that's why the captain and the crew on the Seth Parker are happy.

Perhaps there wouldn't be much cause for rejoicing in that fact, particularly among homemakers, but it means something to the men on the Seth Parker, Phillips Lord's round the world schooner.

As Lord explained in one of his recent broadcasts from the boat, to have the rats leave a vessel is one of the worst omens of the sea. When an old lumber schooner once stopped in port and the rats left the vessel, the crew refused to go to sea again. It was a doomed ship.

When the Seth Parker was reconditioned for the trip all of the rats were routed out by the paint and disinfectant. For several weeks the ship sailed down the Atlantic coast with no rats and the crew were getting worried. But now everyone on board is happy. There are rats on the ship.

Here's Marge, younger half of the "Myrt and Marge" team, which may be heard regularly over CBS stations.

• • •

Studio Chatter

JACK BENNY, radio comedian, is advocating a new idea of preparedness for radio entertainers. He thinks they should make electrical transcriptions of their acts and try them out on one or two stations before presenting them in national programs.

Lanny Ross plans to retire when he has acquired enough money; then he'll devote his time to teaching music.

Clara Lu 'n' Em get up early in the morning to prepare breakfast for their husbands even though they are scheduled to go on the air at an early morning hour.

The first talking picture ever shown to the public was made in 1913, and Gus Van and Joe Schenck, comedy team, were the stars. In fact, they were the whole cast. Van is now heard regularly on the air.

• • •

A Peep at Amos 'n' Andy

WHATEVER goes on behind the closed doors of a studio that doesn't have windows when Amos 'n' Ando go on the air, scarcely anyone knows, except the boys, their announcer, and the studio engineer.

But when the entertainers required, some weeks ago, the assistance of someone to make "crowd noises" some studio attaches were enlisted each evening to provide the noise. And the genius of Amos 'n' Andy has been the subject of a lot of their discussions ever since.

Charles J. Correll, as Andy, and Freeman F. Gosden, as Amos, also take all of the other parts in the sketches, and the acting taxes the limit of ingenuity. One minute Amos bends over a table mike to soothe Andy's worries; next he backs ten feet away to bellow questions as Gwindell's attorney; then he may have to step half way back to be Van Porter or the Kingfish, or put his mouth almost to the reproducer to murmur the words of Lightnin.'

Andy may voice an objection, then Amos must

Get the facts

ABOUT THE AMAZING NEW FRIGIDAIRE FLOWING COLD MILK COOLER

Here's good news for you! A *complete* new Frigidaire Milk Cooler is now ready. You never saw or heard of anything like it before. Water leveling is *automatic*. No matter whether you put in one can or all the cans, the refrigerated water goes up around the necks—above the milk line. It's the greatest feature ever devised for a milk cooler. Water circulation, too, is *automatic*—aeration or stirring not necessary. New Flowing Cold principle cools milk from body heat to 50° in approximately one hour. You'll be surprised to find out the low cost of this wonderful cooler—and how quickly it will pay for itself.

Get all the facts from a new book we've just had printed. This book is free to those who send the coupon right away. Act now!

Frigidaire Corporation, Dept. T-26, Dayton, Ohio.
Send booklet on Frigidaire Flowing Cold Milk Cooler, without cost or obligation. I want to read about it.

Name.....

Address.....

P.O.....State.....

leap to another position and change voices with amazing rapidity. The scene may shift, and the boys crouch over the mike for their dialogue. The Kingfish and others move into and out of the script. And one or the other of the two must bend away from the mike to give the effect of the approach or departure of the voice.

Washing Blankets

(*Continued from page* 13)

woolens. The Bureau of Home Economics takes a modified stand.

"Soak woolens for a very short time if at all."

Well, if we do not have to soak them, we can go right at the washing. To begin with, shake blankets to get out the dust and lint. Then make a heavy suds in the washer, adding, if the blankets are very soiled, a few tablespoons of borax or ammonia. Fill the tub to the water line.

Unless your blankets are very small and thin, you will be wise to wash one at a time. Wool needs a good deal of water in proportion to its bulk, and crowding the tub cuts down the amount of water to the amount of blanket. Then, too, the less water there is, the more chance the blanket has to rub against itself or its neighbor, and the friction of rubbing, like undue heat and great changes in temperature, mat down the fibers of the wool.

Run the machine about three minutes. Since wise housewives wash blankets often rather than hard, and since dirt comes out of wool very easily, it will probably not be necessary to wash it longer than this. If the blanket is not clean at the end of this period, wash it longer, of course. Anyway, the two short periods are judged better than starting the machine and letting it run while you go out and take a look at the brooder.

If the blanket is very dirty, it is wise to wash it in a second suds, then rinse it in two or three waters, all the same temperature as the first, remember.

Perhaps you do not need this reminder, but somebody may. Be sure to wring the blanket out of the water before you drain the tub. If you run the water out while the blanket is still in it, the water will flow off all right, but the dirt you have so painstakingly washed out will not strain through the blanket but catch on the surface, making it gray and dingy when it is dry.

Unless your wringer automatically adjusts its rollers to any change in bulk, loosen them before you wring the blanket through.

The blankets will dry most quickly if you can hang them across two lines two or three feet

apart. Whether they hang thus or on a single line, you must be sure to hang them evenly, with the corners square. If there is a stripe in the blanket, it may be well to hang it vertically, so if its colors should run, they will run in the stripe and not in the rest of the blanket.

Turn the blanket when it is about half dry if you would hasten the drying.

The warmth of a blanket depends largely on the nap, the fluffiness of the wool, so it pays to keep that nap soft and fleecy with careful washing.

Catalogues Worth Having

The F. E. Myers & Bro. Co., of 361 Fourth Street, Ashland, Ohio, have just issued two unusual catalogues, each of 100 pages in size and entitled "Spray Pumps" and "Power Pump and Water Systems." They are unusual because of the fund of useful information contained therein. They are more than catalogues, for they include much material commonly found in agricultural books on water supply. Copies may be secured without cost by writing the Myers company at the address given above.

CHROMALOX
SUPER SPEED RANGE UNIT

Boils Faster—
No Current Wasted

Mrs. A. J. Kachik says: "I have one Chromalox unit installed on my range . . . I find everything comes to a boil in much less time. There is no electricity wasted so that means a saving in our light bill."

Try Chromalox Free on your own range without obligation.

Ask your Power Company for details or write to EDWIN L. WIEGAND CO., 7580 Thomas Blvd., Pittsburgh, Pa., Manufacturers Chromalox Electric Heating Units.

REDUCE FENCING COSTS 80%

The Gengler Fencing Unit is proving a sensation wherever used. Only one strand of barbed wire necessary instead of usual four or five. Eliminates expensive gates. Posts may be set fifty feet apart. SOLD ON MONEY BACK GUARANTEE—Investigate now.

Ask your power company or write

E. J. GENGLER MFG. CO.
STATION F, BOX H
MILWAUKEE, WISCONSIN

Questions and Answers

Conducted by H. J. GALLAGHER

Question: *I have a ¼ h.p. motor. I would like to know how much current it consumes. My unaerstanding is there are 746 watts in 1 h.p., which would be only 186.5 watts in ¼ h.p. A representative of our power company claims that on normal load, the ¼ h.p. motor uses 495 watts, but that the meter registers 311 watts. Please explain.*

Answer: There are 186.5 watts in ¼ h.p. The standard ¼ h.p. motor does use a total of 495 watts per hour and the meter does not register the total amount of current used by motors, but does register about 300 watts per hour for ¼ h.p. motors. The explanation is rather difficult without going into technical details. In the first place the electric motor is a machine for changing electric energy into mechanical energy and it requires some electric energy to make the change in overcoming friction, heating and other losses. In order to get the equivalent of 186.5 watts or ¼ h.p. out of the motor, it is necessary for the motor to use considerable current. If the meter registers 310 watts per hour, the efficiency of the motor is 60 per cent. Thus we have 186.5 watts per ¼ h.p. developed and 123.5 watts required to overcome friction and heat losses or 310 watts that produce actual power. In addition to this amount of electric energy, part of the total current flowing into the motor is used to magnetize the motor as an electric motor depends for its power upon the pull or reaction of its electro-magnets. This magnetizing current is known as "wattless" current. It is not converted into power and because of the nature of its duty in magnetizing the motor the wattless current lags too far behind the working current to be registered on the ordinary meter. A meter using a total of 495 watts and a meter consumption of 310 watts would have a power factor of 62.6 per cent. In a motor with a power factor of 62.6%, a total of 100 amperes would have to be supplied for every 62.6 amperes of working current, the difference of 37.4 amperes being used to energize the circuit.

While wattless current is not registered on the meter, it is a very real load on the generators, transformers and lines of the power company and is a very important factor in the cost of current.

Electric energy used as light and heat has a power factor of nearly 100 per cent, but all A. C. equipment with motors operate at less than 100 per cent power factor.

Question: *If a lightning rod cable runs down and over a steel door track, is it dangerous in case of being struck?*

GEORGE BOSCH,
East Saugatuck, Michigan.

Answer: A lightning rod cable in contact with a steel door track or any other part of the building should not prove dangerous under any conditions, provided: 1. The cable is well grounded (always in contact with wet earth); 2. The cable is made of material offering a minimum of resistance to the flow of current as copper wire: 3. That the size of the cable be sufficiently large to handle a quantity of electricity, the minimum size cable should be at least 7/16 inch diameter.

Poorly grounded cables are dangerous during a lightning storm if one should be in contact with such a cable as it was carrying a charge of lightning the body might offer less resistance than the ground and the current passing through the body prove fatal.

Question: *We have a ½ h.p. motor. Would that be able to run a small saw? We have most everything in the electric line and have this motor extra. Did think of using it on a small feed grinder.*

Please answer through the magazine.

SAM H. MOORE,
Route 5,
The Sunnyside Fruit Farm,
Greenfield, Indiana.

Answer: A ½ h.p. motor can be used satisfactorily with a six-inch or eight-inch diameter saw.

The eight-inch saw should run at a speed of 4,500 revolutions per minute; the revolutions per minute of the six-inch saw should be 6,000. This is equivalent to a peripheral speed for each saw of 9,000 feet per minute.

A six-inch pulley on a 1,750 R. P. M. motor would require a 1¾ inch pulley on the six-inch saw and a 2½ inch pulley on the eight-inch saw. Grooved pulleys and V belts are more desirable on a job of this kind than flat belts.

GET 10% MORE WOOL FROM SAME SHEEP

STEWART ELECTRIC SHEARMASTER

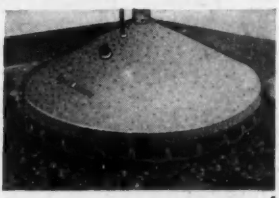
Write for Catalog

Complete self-contained electric shearing machine has powerful small universal motor inside handle. Removes fleece from large sheep in just a few minutes. Gets more wool than hand blades from same sheep. Wool grades better and brings better price. Shearmaster easy to use. $21.00 at your dealer or send us $2.00. Pay balance on arrival. Get complete catalog of Stewart hand power and other clipping and shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, 5524 Roosevelt Road, Chicago, U.S.A.—44 years of quality products.

Take the Gamble OUT of Brooding

with the

TRUMBULL Electric Brooder



Growth will be faster, feathering uniform and tight, mortality lower. The reasons: Even distribution of heat for all chicks; complete freedom from floor drafts; low current consumption, due to accurate thermostat and double wall construction. Two sizes: 100 and 350 chicks.

Write for FREE Folder and Bulletin, giving the results of brooding tests.

THE TRUMBULL ELECTRIC MFG. CO. Dept. W-12 Plainville, Conn.

A GENERAL ELECTRIC ORGANIZATION

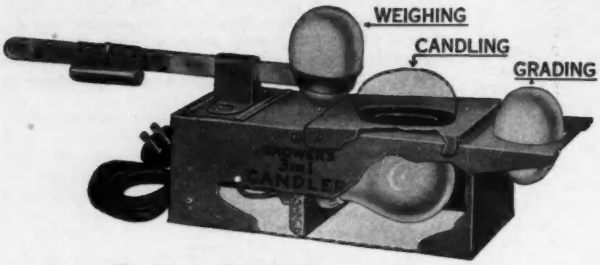
What's New

Reviewed by T. E. HIENTON

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request. Address your requests to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Egg Candler, Grader and Weigher

A new device of interest to poultrymen is a three-in-one item announced by a middle western manufacturer of poultry equipment. This article is used for grading, candling and weighing eggs, all necessary operations in the marketing of high-grade eggs. Of particular interest is the feature in which the weight of an egg turns on the light when it is placed on the candling plate and turns it off when the egg is removed. Construction is of metal finished in apple green. Equipment includes six feet of lamp cord, plug, switch and lamp bulb.



The 3 in 1 Egg Candler

Milk Cooler

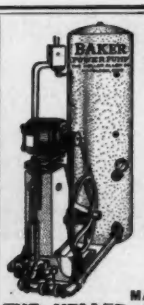
Cooling milk quickly is well recognized by dairymen today as an unavoidable requirement in the production of a high quality product. Speed in cooling is of particular importance where the morning milk is shipped shortly after milking.

A new milk cooler just announced by a leading manufacturer of household refrigeration equipment contains many novel features. An automatic water leveler which maintains a constant water level around the cans in this storage-tank type milk cooler is perhaps the outstanding innovation. The water bath is circulated by means of a motor-driven direct-connected circulator. Three inches of insulation are used in the sides and bottoms and two inches in the tops of the various tanks used. Capacities of 2, 3, 4, 6, 8, 10, 12, 14, 16 and 18 cans are provided in the eleven different models.

Deep-Well Electric Pump

Electric power probably saves more heavy labor on the farm in driving the pump to provide water under pressure than for any other purpose. Several farmers and their wives have indicated after using an electric pump, operated automatically, that they would prefer to do without electric lights rather than their electric pumps if forced to choose between the two.

A middle western manufacturing company of farm equipment has added a new deep-well pump recently to its line of farm electric equipment. This pump head is available complete with tank or alone as desired. The machine cut gears operate in oil. Belt pulley is driven by V belt from the motor on an adjustable mounting. Sizes of motors for the model with 4½-inch stroke are ¼, ⅓ or ½ and for that with 6-inch stroke are ½, ¾ or 1 horsepower. Pump capacities range from 155 to 880 gallons per hour varying with sizes of cylinder and motor. Complete water systems include pump head, electric motor, 42-gallon pressure tank, relief valve, pressure switch, air volume control valve, check valve, V belt and air pressure gage.



BAKER POWER PUMP WATER SYSTEM

DEEP WELL HEAD

Water under pressure, pumped from any depth well, for the home and barn. Various size pumps and capacities—completely automatic—running in oil—superior design. Backed by 48 years' pump manufacturing experience. Attractive low prices.

Write today for free catalogue and engineering service.

MANUFACTURED BY
THE HELLER ALLER CO., NAPOLEON, OHIO
BAKER WINDMILLS, PUMPS, STEEL TANKS, ETC.

The Electrified Fence

(*Continued from page* 10)

2. One wire may be used in place of a heavy gate.
3. Saves time and labor.
4. Saves considerable investment in wire and gates.
5. Keeps livestock from reaching over fence to eat growing crops.
6. Reduces weeds along fence by virtue of livestock eating weeds under wire.
7. Avoids injury to livestock if run through wire fence as smooth wire may be used instead of barb wire.

The disadvantages are:

1. All livestock are not turned away from fence. This was found true with small pigs.
2. Rainstorms tend to ground system although this did not prove to be much of a disadvantage as livestock respect the wire if they have had a shock previously.
3. Electricity may be off for a short time, thus making equipment ineffective.

Even though there may be a few disadvantages of the electric fencer Mr. Kelly stated it was beyond his expectations and that it was successful and worth the investment.

TITLE CONTEST

FEBRUARY COVER

APRIL RULES

Ten cash prizes will be awarded for the 10 best titles for the picture on the front cover of this magazine.

The first prize will be $20 cash and nine second prizes of $2 in cash will be awarded.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

Titles need not be longer than 10 words — the shorter the better — and they do not have to rhyme.

All members of the farm family to whom this magazine was sent may submit titles, but each contestant may submit only one title.

Question "A" must be answered correctly.

Send your title on the coupon below or make out a similar form on a plain sheet of paper or government post card.

Entries must be sent to the Title Editor, ELECTRICITY ON THE FARM, 6 North Michigan Avenue, Chicago, Illinois, before May 1st.

Winning names and titles will be announced in the June issue.

Awards for February

First Prize — $20

"Mother smiles on wash day now
The electric washer taught her how."

MRS. EDA C. GIVENS,
2535 Belmont St., Fresno, Calif.

Nine $2.00 Cash Prizes

"When the washing's electrically done,
Mother is more easily won."

LOUISE H. EISENLOHA, R.F.D. 3, Winsted, Conn.

"Mother smiles at Baby's request
And electricity does the rest."

MRS. R. R. REDDITT, Columbia, La.

"Mother smiles at the child's request,
While the electric washer does the rest."

WALTER A. OLD, Elkview, Penna.

"Mother's willing as anyone would be
When it can be done by electricity."

MRS. VALIRUS KIBBE, JR., Somers, Conn.

"Surely Baby, hand it here
Electric washing's easy, dear."

MRS. EDNA M. STEELE,
R. F. D. 4, Box 66, Norfolk, Va.

"No more cross wash days, for dolly and me,
Since Mamma can wash with electricity."

MRS. NELLIE SANFORD, R.F.D. 3, Liberty, Ind.

"Dolly's dress? Certainly you may,
Electricity's doing the work today."

JANE D. SEARS, Blooming Grove, N. Y.

"An electric washer—so who cares
How many garments Dolly wears!"

INEZ S. WILKINS, Box 321, Salamanca, N. Y.

"To daughter's plea Mother smiles yes—
An electric wash for Dolly's dress."

ANNE BARLOW, R.F.D. 5, West Chester, Penna.

My title for the April Front Cover picture of ELECTRICITY ON THE FARM is.....

.....

.....

(a) What electrically-operated equipment have you obtained during the past six months? (Please identify by brand name).....

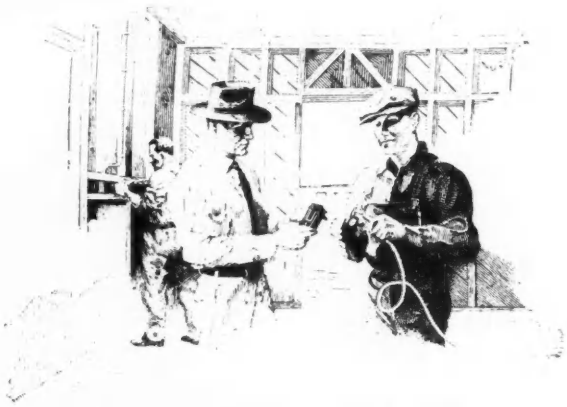
.....

My name is..... R.F.D.....

Post Office..... County..... State..... 4-34

ELECTRICITY ON THE FARM
24 West 40th Street
New York, N. Y.

Return Postage Guaranteed



A Well-planned, Quality Wiring Job Pays

ELECTRIC service can go no farther than the wires that carry it. If you want to make the most of the opportunities electricity offers, give serious consideration to the wiring job.

An adequate, safe wiring job makes fully available the comfort and convenience which modern electric appliances have been designed to provide. Don't skimp on wiring—it is false economy!

Make sure your wiring system is right! There should be outlets for your toaster, percolator and other table appliances. There should be outlets for the vacuum cleaner, electric fan, radio, and lamps. These small things make your home truly comfortable, and they add so trifling an amount to its cost.

And in the barn and outhouses, too, it is important that you have properly placed outlets to facilitate efficient use of electrical servants.

For further information, write your own Electric Company or

Electricity on the Farm

24 West 40th Street, New York

6 North Michigan Avenue, Chicago

d

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